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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/722,898	11/27/2000	Yonatan Aharon Levy	2000-0048	3662

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EXAMINER

MOORE JR, MICHAEL J

ART UNIT	PAPER NUMBER
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2666

DATE MAILED: 03/11/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/722,898

Applicant(s)

LEVY ET AL.

Examiner

Michael J Moore, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-20 is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) received on 12/18/2001 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims **1, 3, and 4** are rejected under 35 U.S.C. 102(e) as being anticipated by Raisanen et al. (U.S. 6,633,540). The Raisanen et al. reference discloses all of the limitations of the listed claims for the reasoning that follows.

Regarding claim **1**, "a method of dynamically managing allocation of bandwidth in a packet network using a Dynamic Setting Scheme for Class Based Queuing" is anticipated by the traffic shaping method for shaping real-time traffic in an IP-based network while simultaneously providing keep-alive bandwidth for best-effort traffic spoken of in column 1, lines 56-65 of the Raisanen et al. reference. "Maintaining a minimized reserved portion of bandwidth to minimize delay jitter" is anticipated by the bandwidth maintained for best-effort traffic spoken of in column 6, lines 61-67. This

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maintained bandwidth provides a reduction in delay jitter. "Maximizing a shared portion of bandwidth to maximize overall bandwidth utilization" is anticipated by the traffic shaping method for shaping real-time traffic in an IP-based network while simultaneously providing keep-alive bandwidth for best-effort traffic spoken of in column 1, lines 56-65. This sharing of bandwidth between real-time and best effort traffic maximizes the utilization of available bandwidth.

Regarding claim 3, "using measurable parameters as control triggers for implementing adjustment of bandwidth allocation" is anticipated by the real-time and best effort latency and queue length measurements spoken of in column 2, lines 28-56. These measurements are used to make adjustments to the allocation of bandwidth.

Regarding claim 4, "the measurable parameters include at least one of: queue length and number of borrowing attempts per a predetermined length of time" is anticipated by the real-time and best effort queue length measurements spoken of in column 2, lines 39-56.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raisanen et al. in view of reference "U" of the references cited page (PTO-892) that was submitted in the IDS.

Raisanen et al. discloses the method of claim 1. Raisanen et al. does not disclose that "allocation of bandwidth is based on a sharing tree hierarchical scheme that provides for temporary borrowing of bandwidth by real-time applications from bandwidth of non-real-time applications and blocks borrowing of bandwidth by non-real-time applications from bandwidth of real-time applications." However, reference "U" discloses a hierarchical link-sharing structure in Figure 3 that allows for bandwidth sharing between real-time and non-real-time applications. Formal link-sharing guidelines spoken of on page 6, first column, show different scenarios that specify when and from whom classes are allowed to borrow bandwidth. Page 6, second column describes bounded classes, which are not allowed to borrow from ancestor classes. Also, on page 9, second column, an example states that when an ftp class stops transmitting for a few seconds, "excess" bandwidth is shared between two real-time classes. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the bandwidth allocation

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method of Raisanen et al. with the sharing tree scheme of reference "U". A motivation for doing so would be to provide link-sharing that can prevent starvation of lower priority traffic while still satisfying the needs of higher-priority traffic and at the same time give network flexibility for new real-time applications as stated in page 2, lines 1-4 of reference "U".

Allowable Subject Matter

7. Claims **5-20** are allowed.

8. The following is an examiner's statement of reasons for allowance:

Regarding claims **5, 10, and 15**, the prior art made of record teaches a method, a computer-readable medium, and a device for dynamically managing allocation of bandwidth in a packet network using a Dynamic Setting Scheme for Class Based Queuing. The prior art made of record fails to teach "measuring a predetermined parameter at predetermined observation window times; and dynamically adjusting allocated bandwidth for parent classes of real-time traffic by adjusting an average of the predetermined parameter to have a value within a predetermined stable region".

Regarding claims **6, 11, and 16**, the prior art made of record teaches where "dynamically adjusting allocated bandwidth is based on a sharing tree hierarchical scheme that provides for temporary borrowing of bandwidth by real-time applications from bandwidth of non-real-time applications and blocks borrowing of bandwidth by non-real-time applications from bandwidth of real-time applications. The prior art made of record fails to teach "measuring a predetermined parameter at predetermined observation window times; and dynamically adjusting allocated bandwidth for parent

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classes of real-time traffic by adjusting an average of the predetermined parameter to have a value within a predetermined stable region".

Regarding claims **7, 12, and 18**, the prior art made of record teaches that "the parameter measured is one of: queue length and number of borrowing attempts during a predetermined measurement window". The prior art made of record fails to teach "measuring a predetermined parameter at predetermined observation window times; and dynamically adjusting allocated bandwidth for parent classes of real-time traffic by adjusting an average of the predetermined parameter to have a value within a predetermined stable region".

Regarding claims **8, 13, and 19**, the prior art made of record fails to teach using the number of borrowing attempts during a measurement window to find a maximum and minimum bandwidth using the claimed mathematical equations.

Regarding claims **9, 14, and 20**, the prior art made of record fails to teach using the claimed mathematical equations in order to determine a lower and upper threshold for a queue length.

Regarding claim **17**, the prior art made of record teaches, "using measurable parameters as control triggers for implementing adjustment of bandwidth allocation". The prior art made of record fails to teach "measuring a predetermined parameter at predetermined observation window times; and dynamically adjusting allocated bandwidth for parent classes of real-time traffic by adjusting an average of the predetermined parameter to have a value within a predetermined stable region".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hughes et al. (U.S. 6,535,484), Aweya et al. (U.S. 6,690,645), Nguyen (U.S. 6,680,906), Basso et al. (U.S. 6,690,678), Chapman et al. (U.S. 6,493,316), Wu (6,442,164), Fan et al. (U.S. 6,424,622), Duffield et al. (U.S. 6,452,933), Tanaka (U.S. 6,657,958), McConnell et al. (U.S. 6,108,307), Chen et al. (U.S. 6,201,793), and Kaczynski (U.S. 6,205,119) are all references that contain material pertinent to this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (703) 305-8703. The examiner can normally be reached during the hours of 8:30am - 5:00pm (Monday-Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael J. Moore, Jr.
Examiner
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DANG TON
PRIMARY EXAMINER